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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,553	06/18/2001	Robert Wastlhuber	56/353	2380

7590 06/28/2005

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EXAMINER	
LE, VIET Q	

ART UNIT	PAPER NUMBER
2667	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/884,553	WASTLHUBER ET AL.	
	Examiner	Art Unit	
	Viet Q. Le	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This communication is in response to applicant's amendment filed on 03/25/2005.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-10, 16-21, 28-42, 44-53 & 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagl et al. (U.S. 5,687,103), hereinafter referred to as Hagl in view of Rehm et al. (U.S. 5,909,371), hereinafter referred to as Rehm.

Regarding claims 1, 29, 36 and 47 Hagl disclosed a method for serial data transmission between a position measuring system (Figure 1, NCK unit) and a processing unit (Figure 1, RZ1-2, R12, R13, R11 processors), comprising:

Hagl disclosed a method or device for serial data transmission between a position measuring system and a processing unit (See Fig. 1, blocks 100 and 400), comprising: transmitting position data and further data between said position measuring

system and said processing unit in serial form as digital data words (Measuring device transmit the angle position as a binary data word to the processing unit. See column 3, lines 3-6); transmitting up-to-date position data between said position measuring system and said processing unit upon transmission of a position request command (commands from the processing units are sent to the position measuring device to retrieve current data. Status command A is used in the example of this reference. See column 3, lines 40-54 and 58-64).

Hagl, however, fails to disclose transmitting further data, whose processing is not time-critical, immediately following said transmitting said up-to-date position data.

Rehm disclosed the process of data, whose processing is not time-critical, immediately following said transmitting said up-to-date position data (Figure 2. RZ1 and RZ2 are time critical data. Non-time critical data of FZI immediately follow time critical data in figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hagl method to process non-time-critical, immediately following transmitting said up-to-date position data, the motivation being that by transmitting non-time-critical immediately following said transmitting said up-to-date position data, bandwidth would not be wasted between time critical transmission between the 2 devices.

Regarding claims 2 and 4, Hagl disclosed the method, wherein said further data is transmitted between the position measuring system and the processing unit (See Fig. 1, blocks 100 and 400).

Regarding claim 3, Rehm disclosed the method in accordance with claim 1; further comprising transmitting a position request command for requesting said up-to-date position data (Column1, lines 16-24. Figure 2. RZ1 and RZ2 are time critical data); and always transmitting immediately following said position request command, further data (Figure 2. Non-time critical data of FZI immediately follow time critical data in figure 2) whose processing is not time-critical.

Regarding claims 5-7 and 9, Hagl disclosed the method, further comprising transmitting said up-to-date position data and said position request command in the form of digital data words of a pre-determined word length, or as data packets comprising digital data words (Sampling signals are amplified and converted into digital signals for a binary word. See column 3, lines 3-12).

Regarding claims 8 and 10, Hagl disclosed the method, wherein said additional non-time-critical data comprises additional data and additional data commands (Besides the position data, there is also other data request commands and other corresponding data to these data requests like status commands and their responses to commands A-F. See column 3, lines 59-67; See column 4, lines 1-42).

Regarding claim 16, Hagl disclosed the method, wherein all data transmitted between said position measuring system and said processing unit are transmitted over a common data channel (See column 2, lines 23-24).

Regarding claim 17, Hagl disclosed the method, wherein data transmitted from said position measuring system to said processing unit are transmitted via a first data

channel, and said data transmitted from said processing unit to said position measuring system are transmitted via second data channel (See Fig. 1, lines 500).

Regarding claims 18 & 19, Hagl disclosed the method; further comprising storing said non-time-critical data (See Fig. 1, block 900; See column 4, lines 1-2).

Regarding claim 20, Hagl disclosed the method, further comprising storing non-time-critical data transmitted by said position measuring system in a second memory unit of said processing unit (Status command D can be used to send saved parameters at the processing unit to the position measurement device. See column 4, lines 33-35).

Regarding claim 21, Hagl disclosed the method, further comprising transmitting memory unit status data, which contain at least information regarding an actual memory status of a memory unit (Using command B, one can read or write data into memory. See column 4, lines 1-21).

Regarding claim 28, Hagl disclosed the method, wherein with said transmitting of either of said digital data words or data packets, a data word identification is transmitted, which unequivocally identifies a beginning and type of digital data word or data packet (Start bit is used to identify the beginning of the word. Different types of parameters were also described. See column 4, lines 36-37, 55; See column 5, lines 25-26; See column 6, lines 53-67).

Regarding claim 32, Hagl disclosed the device, further comprising a first data channel and a second channel for transmitting data between said position measuring system and said processing unit, wherein said first data channel transmits data in a first

direction and said second data channel transmits data in a direction opposite to said first direction (See Fig. 1, lines 500).

Regarding claim 33, Hagl disclosed the method; further comprising storing said non-time-critical data (See Fig. 1, block 900; See column 4, lines 1-2).

Regarding claim 30, Rehm disclosed the device in accordance with claim 29, wherein said processing unit (Figure 1, RZ1-2 processors) comprises a second control unit (Figure 1, RZ1-2 processors), which causes transmission of said position request command to said position measuring system for requesting position data (Column 1, lines 16-24) and, following said transmission of the position request command always causes said transmission of further data (Figure 2. RZ1 and RZ2 are time critical data. Non-time critical data of FZI immediately follow time critical data in figure 2), whose processing is not time-critical.

Regarding claim 31, Hagl disclosed the method, wherein all data transmitted between said position measuring system and said processing unit are transmitted over a common data channel (See column 2, lines 23-24).

Regarding claim 34, Hagl disclosed the method, further comprising storing non-time-critical data transmitted by said position measuring system in a second memory unit of said processing unit (Status command D can be used to send saved parameters at the processing unit to the position measurement device. See column 4, lines 33-35).

Regarding claim 35, Hagl disclosed the device, wherein said control unit comprises a processor (The figure describe the position measuring device including control circuitry and processor circuitry. See Fig. 1, block 100).

Regarding claim 37 & 45 & 49, Rehm disclosed the method in accordance with claim 36, wherein up-to-date position data always occurs between said non-time critical signals (Figure 2. RZ1 and RZ2 are time critical data, processed between non-time critical data of FZI as indicated in figure 2).

Regarding claim 38 & 50, Rehm disclosed the method in accordance with claim 36, wherein parameters of said position measuring system are transmitted via said non-time-critical signals (Column 1, lines 25-30).

Regarding claim 39 & 51, Rehm disclosed the method in accordance with claim 36, wherein measured temperature values are transmitted via said non-time-critical signals (Column 1,lines 28. Non-critical signals can be many things like indicated by line 28 of column 1. This can be understood as temperature reading).

Regarding claim 40 & 52, Rehm disclosed the method in accordance with claim 36, wherein diagnostic data of said position measuring system are transmitted via said non-time-critical signals (Column 1,lines 28. Non-critical signals can be many things like indicated by line 28 of column 1).

Regarding claim 41 & 53, Rehm disclosed the method in accordance with claim 36, wherein assignment information is transmitted or processed with each of said non-time-critical signals (Column 1,lines 28. Non-critical signals can be many things like indicated by line 28 of column 1).

Regarding claim 42, Rehm disclosed the method in accordance with claim 36, further comprising requesting, via said processing unit, transmission or process of said non-time-critical signals from said position measuring system (Column 1, lines 16-30).

Regarding claim 44, Rehm disclosed the method in accordance with claim 3, wherein data transmitted from said position measuring system to said processing unit are transmitted via a first data channel (Figure 1. Column 1, lines 50-55), and said data transmitted from said processing unit to said position measuring system are transmitted via a second data channel (Figure 1. Column 1, lines 50-55).

Regarding claim 46 & 55, Rehm disclosed the method in accordance with claim 36, wherein said non-time-critical signals are chronologically distributed over several blocks (Figure 2, FZI blocks).

Regarding claim 48, Rehm disclosed the system in accordance with claim 47, further comprising:

A first data channel in communication with said position measuring system and said processing unit and transmitting data from said position measuring system to said processing unit (Column 1, lines 16-25; Column 3, lines 50-55); and

A second data channel in communication with said position-measuring system and said processing unit and transmitting data from said processing unit to said position-measuring system (Column 1, lines 16-25; Column 3, lines 50-55).

4. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagl in view of Rehm and in further view of Kurten (DE 4005087 C1).

Regarding claims 11-15, Hagl and Rehm disclosed a method or device for serial data transmission between a position measuring system and a processing unit as described in claim 1 above.

Hagl and Rehm, however, fail to disclose the ability of interrupting the transmission of non-time-critical data upon detecting a position data request command.

Kurten teaches the ability of immediately interrupting processing a current process in responding to a more priority processing command and continuing with the current process once the more priority or urgent processing command is completed at a later time (See column 2, lines 38-42).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hagl & Rehm method to incorporate the interrupting feature, the motivation being that by incorporating the interrupting feature, a more urgent data can be responded immediately for parameters that are time sensitive and continuing with the non-time sensitive at a later time.

5. Claims 22-24, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagl in view of Rehm and in further view of Kent (U.S. 5,371,859).

Regarding claims 22-24 and 26, Hagl and Rehm disclosed a method or device for serial data transmission between a position measuring system and a processing unit as described in claim 1 above.

Hagl and Rehm, however, fail to disclose different position request commands can be assigned with different processing priorities.

Kent teaches the ability of assigning different levels of priority to a message and messages are processed in the order of assigned priority levels (See column 7, lines 10-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hagl & Rehm method to assign different priority levels to position request commands, the motivation being that by processing position request commands depending on different levels of priorities, one can assure that data that are more critical for control purposes can processed immediately before other parameters.

6. Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagl, Rehm, Kurten (DE 4005087 C1) and in further view of Kent (U.S. 5,371,859).

Regarding claims 25 and 27, Hagl and Rehm disclosed a method or device for serial data transmission between a position measuring system and a processing unit as described in claim 1 above.

Hagl & Rehm, however, failed to disclose the ability of interrupting the transmission of non-time-critical data upon detecting a position data request command and failed to disclose different position request commands can be assigned with different processing priorities.

Kurten teaches the ability of immediately interrupting processing a current process in responding to a more priority processing command and continuing with the current process once the more priority or urgent processing command is completed at a later time (See column 2, lines 38-42).

Kent teaches the ability of assigning different levels of priority to a message and messages are processed in the order of assigned priority levels (See column 7, lines 10-24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hagl & Rehm method to incorporating the interrupting feature and to assign different priority levels to position request commands, the motivation being that by incorporating an interrupting feature, one can stop the current process and proceed with a more urgent and more priority request for a more time sensitive parameter.

7. Claims 43 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagl & Rehm in view of Hagl et al. (U.S. 5,687,103) hereinafter referred to as Hagl.

Regarding claim 43 and 54, Hagl and Rehm disclosed a method or device for serial data transmission between a position measuring system and a processing unit as described in claim 1 above.

Hagl & Rehm, however, fails to disclose said up-to-date position data, additional non-time-critical data and said position request command are in the form of digital data words of a predetermined word length, or as data packets comprising digital data words.

Hagl disclosed data transmitted as a binary data word between the position-measuring device and the processing unit (See column 3, lines 3-6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize digital data words exchanged between the position measuring device and the processing unit, the motivation being that the digital data words are digital data which can be used in conjunction with synchronization signals in providing both critical and non-critical signals.

Response to Arguments

8. Applicant's arguments with respect to claims 1-55 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viet Q. Le whose telephone number is 571-272-2246. The examiner can normally be reached on 8 AM -5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VL

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6/27/05